LBP

Lead-based Paints (LBP) - Awareness Training -

Lead-based Paints (LBP)

1. Characteristics and use
2. Health effects
3. Investigation and risk assessment
4. Abatement and disposal
5. Heidelberg Garrison's LBP management

LBP

1. Lead – characteristics and use

Lead – the element

- **Bluish/whitish or grey, odorless, flexible substance; heavy metal**
- **Naturally occuring in various ores**

Characteristics and use

- **Accumulators, cabel coating, container and pipes, soldering materials**
- **Gasoline**
- **Ceramics and glasses**
- **Lead containing paints, varnish and alloy**
- **USA: LBP in buildings built before 1978**
- **Use of LBP: Pigment coating, corrosion and weather pro**

2. Lead – health effects

Problem

- **Damages to paint surfaces and deterioration**
- **Release of lead containing paint particles: Dust and paint chips**

Possible effects

- **Inhalation of lead particles vs. relatively high specific weight of lead**
- **Ingestion of paint chips by kids (hand-to-mouth activities)**
- **Acute toxic effects possible: Stomach cramp, muscle and joint pain**
- **Long term effects: Damages to the nervous system or organs (kidneys, heart)**
- **Kids: Concentration/learning problems, hyperactivity, aggressive behavior**

- **The mere presence of LBP doesn‘t pose a health risk, the possible release of lead particles is critical.**

3. LBP – investigation and risk assessment

LBP in buildings

- **Building inspections (AFH) by Lead Inspectors or Lead Risk Assessors**
- **Testing combinations: Walls and ceilings, wooden panels, doors/door frames, windows/window frames, cabinets, handrails etc.**

Evaluation

- **Paint chip sampling vs. on-site measurements (X-ray fluores**
- **LBP: >0,5% lead or >1 mg/cm² lead (XRF)**
- **Evaluation of paint condition (possible damages)**
- **Room use (frequency, kids)**
- **Wipe sampling (floor surface: max. 100 µg/sqft lead)**

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4. Lead – abatement and hazard control

Abatement options

- Removal of building components (doors, windov
- LBP removal
- Encapsulation: Surface sealing by a chemical ag to prevent any release of lead particles
- Enclosure: Airtight barrier as containment

In-Place Management

- Removal of deteriorated paint, paint film stabilization and repainting
- Dust removal
- Interim controls (inspections and re-assessments)

Handling lead-based paints

- Release of lead particles has to be avoided.

4. Lead – abatement and hazard control

Abatement design and organization (BGR 128, TRGS 524, TRGS 505)

- **Abatement by authorized companies only**
- **Notification needs to be submitted to the local work safety authority**
- **Work and safety plan (type, scope, and duration of work, protective measures etc.)**
- **Standard operating procedures, workers‘ briefing IAW TRGS 555**
- **Personnel requirements (trained personnel, certified supervisor)**
- **Medical surveillance examinations IAW BGV A 4**
- **Restrictions on employment**
  (no teenagers, no pregnant or breast feeding women

4. Lead – abatement and hazard control

Technical & organizational protection measures

- Work area preparation (containment)
- Ventilation of the work area, dust exhaust (K 1 or HEPA filters)
- Paint removal (mechanical, chemical or by heat guns)
- Waste packaging in appropriate, secured and labelled big bags
- Comprehensive cleaning of all surfaces (K 1 or HEPA vacuum-cleaners)
- Final clearance testing (visual control and wipe sampling)

Personal Protective Equipment (PPE)

- Disposable suits including hood, gloves and boots
- Respiratory protection: Full face or half face masks with P2 filters or HEPA filters
- Training how to use, maintain and dispose of your PPE

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LBP Management

Main management elements

- **Identification of all LBP (child-occupied facilities) as well as risk assessments**
- **Re-surveys and re-assessments of products and their condition**
- **Information of buildings occupants and personnel**
- **Work order/service order control system (project monitoring/supervision)**
- **Recommendations concerning the handling of hazardous materials**
- **Training**

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Discussion